



August 28, 1985

Mr. Chuck Illsley  
Rocky Flats Plant  
Rockwell International Corporation  
P.O. Box 464  
Golden, CO 80401

Re: Plutonium in the water

Dear Chuck,

I am enclosing an article which I'm sure you saw in the Rocky Mountain News, and I only say that I stand ready to help Rocky Flats come out with some more positive press.

Governor Lamm certainly doesn't help any, but maybe part of the problem is that not everybody is informed.

Please let me know if somehow or other I can do some things that will help you generate some more positive press. I believe I came up with a few ideas in my last letter.

Yours very truly,

  
Charles C. McKay

CCM/cjg

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WEATHER



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# Plutonium in area water

Risks debated; levels top those in New York/6

# Area water plutonium levels top NYC's

By STEVE CHAWKINS

Rocky Mountain News Staff Writer

Scientists routinely find higher concentrations of cancer-causing plutonium in water systems near the Rocky Flats nuclear weapons plant than investigators discovered last month in New York City's water supply.

But most researchers say the elevated Colorado plutonium levels, which are well below the most conservative government standards, pose no health threat.

In New York, the plutonium reading that raised fears of an unknown terrorist contaminating the city's water supply was 21 femtocuries. (A femtocurie is a billionth of a millionth of a curie, a measure of radioactivity.)

But, according to readings taken by the Colorado Department of Health, plutonium levels this year in treated water in Broomfield, Arvada, Boulder and Golden have been nearly three times as high, and Westminster plutonium levels were nearly twice as high. The cities are monitored for radioactive water regularly because of their proximity to Rocky Flats, as well as to uranium mining operations in the foothills.

In 1984, the plutonium level in Boulder approached 270 femtocuries in one reading. Golden's level approached 130 femtocuries, Arvada's 140 femtocuries, and Westminster's 150 femtocuries.

Municipal officials see no immediate threat.

"We certainly have some concern about emissions from the plant," said Boulder treatment coordinator Bob Wheeler, "but generally wind flows are such that they're not coming toward our water sources (near Nederland). When there's an upslope condition, though with winds coming from the east, then we definitely have some concern."

Scott Daniels, who monitors water quality for Arvada, said the city has been worried more by water-borne uranium from the Schwartzwalder mine than plutonium from Rocky Flats. Plutonium clings to soil particles, he said, and, like uranium, largely can be filtered out. "The treatment process has been really effective in removing radioactive constituents," he said.

Crucial to weapons manufacture at Rocky Flats, plutonium is a byproduct of nuclear fission. Extremely toxic, it can be excreted by the human body only over the course of decades once it settles in the bones — which it seeks once it's ingested.

Al Hazel, the official in charge of monitoring radioactivity for the Colorado Department of Health, says many of the plutonium readings in the Rocky Flats area may be unrealistically high because of errors inherent in measuring such minute quantities.

"When you're that close to zero, you expect fluctuations," Hazel said. "We call it noise. Some of it is statistical noise and some of it is electrical noise."

Hazel said that most of the high readings do not likely stem from activity at Rocky Flats. Fallout from above-ground nuclear testing still drifts through the upper atmosphere, and can drop down when fierce winds or atmospheric inversions roll the air, he said.

Dr. Carl Johnson, fired as Jefferson County health director in 1981 for his outspoken criticisms of Rocky Flats, disagrees. "Routine emissions from the plant dust the reservoirs with plutonium," he said.

Rocky Flats spokesmen say virtually no plutonium escapes into the air during routine operations.

Exactly how much plutonium makes water dangerous is a subject of heated dispute. Johnson thinks water supplies should be shut off if plutonium levels reach 600 femtocuries. The state health department starts investigating after consistent readings greater than 60 femtocuries, but has no specific guideline for shutting down a water supply.

The Environmental Protection Agency doesn't suggest action until plutonium levels soar to more than 25 times the level Johnson recommends.

The danger even then is far from dramatic, EPA scientists say. "We've calculated

that there would be eight additional cases of cancer a year in a city of 100,000, assuming everyone in town drank two liters of water a day for their entire lifetimes," said Rick Cothorn, an EPA health physicist who helped to draft the standard.

That's far too rosy a picture, according to some scientists. Dr. Karl Z. Morgan of the Georgia Institute of Technology's School of Nuclear Medicine, told a congressional committee in 1979 that water less than one-quarter as contaminated as the EPA's standard could cause a 30 percent increase in the cancer rate.

Johnson, whose frequently disputed studies show a link between Rocky Flats and increased cancer incidence, scoffs at the EPA standard. "It's utterly ridiculous," he said. "Everybody believes plutonium is at least 16 times more toxic than radium. I believe it's 200 times more toxic — but the EPA's standard for radium is more stringent than its plutonium standard."

Johnson maintains that plutonium levels skyrocketed in the early 1970s to more than 5,000 femtocuries in Broomfield, and into the thousands in other area water supplies, including Denver's. State health department officials counter that retesting of those same samples yielded much lower plutonium readings, however.

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Johnson is skeptical of the mainstream scientific perception that plutonium's threat is limited in water because most of it doesn't dissolve, settling instead on lakebeds, or being trapped by filters at water treatment plants.

But many scientists don't share that view.

"It's hard to put together a scenario thinking about how you can contaminate drinking water with plutonium," said Robert Larsen, a recently retired nuclear chemist who supervised environmental research projects at the Argonne National Laboratory in Argonne, Ill.

"If a nuclear reactor on the shores of Lake Michigan were to slip its moorings and, with a ton of plutonium, melt into the lake like a sugar cake, the plutonium level in the water would still be thousands of times less than the permissible standard," he said. "Most of it would sink. If you're really concerned about radiation, get out of Denver," he said. "You get twice as much of it from the sun as I get here in Chicago."

Murky as the standards may be, one thing is certain: Rocky Flats was directly responsible for injecting alarming levels of plutonium into Broomfield's Great Western Reservoir in the 1960s and 1970s.

The weapons plant poured plutonium-laden sludge and radioactive tritium into Walnut Creek, which empties into the reservoir. The creek also carried wastewater from a laundry that washed workers' plutonium-contaminated clothing. Soil contaminated by plutonium from 3,000 leaking barrels blew across the Flats. An explosion in 1957 and a fire in 1969 spewed plutonium dust, some of which settled in area water.

In 1973, when settling ponds were being reconstructed along Walnut Creek, sediments containing plutonium were stirred up and sent downstream to the Great Western Reservoir.

The last incident raised plutonium levels to a level initially described by state health officials as exceeding 5,000 femtocuries, but later downgraded to no more than 2,290 femtocuries.

Since then, Broomfield has contracted with Denver to bypass the Great Western Reservoir and use Denver water — which about half of the suburb's 21,000 residents now drink — in case of an emergency. And Rocky Flats has started to recycle virtually all of its industrial waste, plant officials say, so only natural runoff drains into Walnut Creek.

"The plutonium levels are slightly higher there, but you'd expect to find that if Rocky Flats had ceased to discharge anything," said Hazel.

Whether long-time Broomfield residents ultimately will suffer from more cancer than other people can't be determined. However, a 1978 study by the Boulder County Health Department found no unusual cancer incidence in a 100-block Broomfield area where residents had been drinking Great Western water for 20 years.

"I think most people who have lived here generally have a good feel for what the problem was and what we've done to correct it," said Broomfield city chemist Kathy Kochevar. "But we've got new residents who move in and